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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,817	02/19/2002	Douglas R. Manley	10011387-1	7130

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EXAMINER	
TRIMMINGS, JOHN P	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/078,817	MANLEY ET AL.	
	Examiner	Art Unit	
	John P Trimmings	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-15,17,18,20,22-25,27 and 30-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-15,17,18,20,22-25,27 and 30-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the applicant's amendment dated 11/19/2004.

Claims 1, 3, 7, 12, 15, 18, 20, 22-25 and 28 were amended by the applicant.

Claims 2, 16, 19, 21, 26 and 29 were cancelled by the applicant.

Claims 1, 3-15, 17, 18, 20, 22-25, 27, 18 and 30-32 are pending.

Response to Amendment

1. In view of the changes to Figures 5-8, the examiner has withdrawn the objections to the drawings and approves the said changes.

2. In view of the changes to the Specification, the examiner has withdrawn the objections to the Specifications and approves the said changes.

3. In view of the applicant's changes, cancellations, and amendments to Claims 1, 7, 16, 19, 22-25 and 28, the examiner withdraws all rejections to said claims under 35 USC 112 first and second paragraphs.

Response to Arguments

4. Applicant's arguments with respect to independent Claims 1, 15, 20, 25 and 28 have been considered but are moot in view of the new ground(s) of rejection (see below).

Claim Rejections - 35 USC § 103

5. Claims 1, 3-5, 15, 17, 20, 22-25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banks, U.S. Patent No. 6487593, in view of Wei et al., U.S. Patent No. 6515967, and further in view of Wallace, U.S. Patent No. 5481548.

As per Claims 1, 15, 20, 25 and 28:

Banks teaches a method and system for diagnosing faults in a system under test (SUT) (column 1 lines 64-66), the SUT defining data transmission paths through which data are transferred (see FIG.1), said method comprising: identifying at least some portions of the data transmission paths of the SUT capable of introducing errors in data transfer (column 1 lines 66-67 and column 2 lines 1-8), but fails to further provide constraints. But in the analogous art of Wei et al., this feature is taught, wherein the system/method provides constraints (for example, column 6 lines 21-23, drops >20%) defining relationships of at least some of the portions of the data transmission paths identified (see FIG.1 and FIG.2 for paths); and diagnosing the SUT with respect to the constraints (column 6 lines 56-65). And Wei et al., in column 2 lines 46-50, boasts of a real-time fault detection system. One with ordinary skill in the art at the time of the invention, motivated as suggested, would have found it obvious to include the test constraint capabilities of Wei et al. with the network identification system of Banks in order to detect faults in real-time. But neither Banks nor Wei et al. teach providing a dataflow model such as is depicted in FIG.1 of each of these references. But in an analogous art, Wallace does disclose this feature, wherein identifying comprises providing a dataflow model corresponding to the SUT including edges (FIG.8, between 38A, 38B, 38C), each of which corresponds to a portion of one of the data transmission

paths of the SUT capable of introducing errors in data transfer (see LEG ANALYSIS FIG.7 and column 18 lines 1-25). And column 3 lines 30-35 describe the advantage as being a transmission test system that may be remotely accessed. One with ordinary skill in the art at the time of the invention, motivated as suggested, would have found it obvious to include the diagnostic system of Wallace with the test system of Banks and Wei et al. in order to implement remote diagnostic testing.

As per Claim 3:

Banks, Wei et al., and Wallace further teach the method of claim 1, wherein the dataflow model includes vertices (Wallace, FIG.8 38A, 38B, 38C), each of the edges being defined between two of the vertices. And in view of the motivation previously stated, the claim is rejected.

As per Claim 4:

Banks, Wei et al., and Wallace further teach the method of claim 3, wherein each of the vertices is at least one of a termination of an edge (Wallace FIG.8 60A) and representative of a location where an operation with respect to data can occur (Remote Test Unit). And in view of the motivation previously stated, the claim is rejected.

As per Claim 5:

Banks, Wei et al., and Wallace further teach the method of claim 4, wherein the operation corresponding to a vertex includes at least one of dropping data, splitting data, routing data, replicating data and combining data (Wei et al. column 6 lines 21-23 drops>20%). And in view of the motivation previously stated, the claim is rejected.

As per Claim 17:

Wei et al. further teaches the method of claim 15, wherein diagnosing the SUT comprises: generating information indicative of the manner of failure (Wei et al. column 6 lines 43-65). And in view of the motivation previously stated, the claim is rejected.

As per Claim 22:

Wallace further teaches the system of claim 20, wherein said reasoning engine is adapted to evaluate the test results of the SUT with respect to constraints, the constraints defining relationships of at least some of the portions of the dataflow model (for example, see FIG.7). And in view of the motivation previously stated, the claim is rejected.

As per Claim 23:

Banks, Wei et al., and Wallace further teach the system of claim 20, wherein said reasoning engine is adapted to receive information corresponding to failed data transfers and identify portions of the SUT potentially associated with the failed data transfers (see Wallace FIG.7). And in view of the motivation previously stated, the claim is rejected.

As per Claim 24:

Wallace further teaches the system of claim 20, further comprising: an SUT communicatively coupled to at least one of said dataflow model and said reasoning engine (the relationship between FIG.7 and FIG.8). And in view of the motivation previously stated, the claim is rejected.

As per Claim 27:

Wallace further teaches the system of claim 25, further comprising: means for testing the SUT to generate test results (see Wallace FIG.1). And in view of the motivation previously stated, the claim is rejected.

6. Claims 6-10, 12-14 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banks, U.S. Patent No. 6487593, in view of Wei et al., U.S. Patent No. 6515967, in view of Wallace, U.S. Patent No. 5481548 as applied to Claims 1 and 28, and further in view of Sasin et al., U.S. Patent No. 6011830.

As per Claims 6, and 30:

Banks, Wei et al., and Wallace fail to further teach analyzing results with respect to the dataflow model. But in an analogous art, Sasin et al. does teach this feature wherein the SUT test results are received (FIG.3b to BD-INT) diagnosing comprises analyzing results (FIG.3b CMP, column 14 lines 7-27) associated with a time of error. And in column 5 lines 8-18, the advantage cited is that of a test system which quickly performs complex operational tests while conforming to real conditions. One with ordinary skill in the art at the time of the inventions, motivated as suggested, would find it obvious to combine the techniques of Sasin et al. with the method of Banks, Wei et al., and Wallace in order to provide superior testing of a transmission system.

As per Claim 7:

Banks, Wei et al., and Wallace further teach the method of claim 6, wherein the SUT includes counters corresponding to at least some of the edges of the dataflow model (FIG.2 35); and further comprising: receiving information, corresponding to the

test results, from at least some of the counters (FIG.2 41 and column 6 lines 41-54). And in view of the motivation previously stated for Sasin et al., the claim is rejected.

As per Claim 8:

Banks, Wei et al., and Wallace further teaches the method of claim 6, wherein the dataflow model is a directed graph (for example, Banks FIG.1). And in view of the motivation previously stated, the claim is rejected.

As per Claim 9:

Sasin et al. further teaches the method of claim 6, wherein analyzing the test results comprises: receiving information corresponding to failed data transfers; and identifying portions of the SUT potentially associated with the failed data transfers (column 39 lines 6-20). And in view of the motivation previously stated, the claim is rejected.

As per Claim 10:

Sasin et al. further teaches the method of claim 9, wherein analyzing the test results comprises: exonerating portions of the SUT initially identified as being associated with the failed data transfers if those portions of the SUT are determined not to have initiated at least one of the failed data transfers (column 26 lines 15-67). And in view of the motivation previously stated, the claim is rejected.

As per Claim 12:

Banks, Wei et al., and Wallace further teach the method of claim 1, wherein the constraints correspond to data flow characteristics of the SUT exhibited with respect to the vertices (for example, Wallace FIG.7). But Banks, Wei et al., and Wallace fail to

teach specifics of the dataflow model. Sasin et al. does teach the features lacking in Banks, Wei et al., and Wallace, wherein identifying comprises providing a dataflow model corresponding to the SUT (see Abstract), the dataflow model including edges and vertices (column 14 lines 48-67 and column 15 lines 1-16), each of the edges corresponding to a portion of one of the data transmission paths of the SUT capable of introducing errors in data transfer (column 6 lines 37-41, column 52 lines 44-50, column 54 lines 15-21), each of the edges being defined between two of the vertices (column 16 lines 30-65). And in view of the motivation previously stated, the claim is rejected.

As per Claims 13 and 14:

Banks, Wei et al., and Wallace further teach the method of claim 12, wherein at least one of the constraints of at least one of the vertices relates that an amount of good data flowing into the vertex corresponds to an amount of data flowing from the vertex (for example, Wei et al. column 6 lines 13-43). And in view of the motivation previously stated, the claims are rejected.

As per Claims 31 and 32:

Banks, Wei et al., and Wallace fail to further teach the diagnosis system of claim 28, wherein said logic configured to diagnose includes logic configured to identify portions of the SUT potentially associated with failed data transfers, and said logic configured to diagnose includes logic configured to exonerate components initially identified as being associated with the failed data transfers. But Sasin et al. teaches these features in column 3 lines 8-21 (data transfers), and column 26 lines 15-67 (resetting states). And in view of the motivation previously stated, the claim is rejected.

7. Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banks, U.S. Patent No. 6487593, in view of Wei et al., U.S. Patent No. 6515967, in view of Wallace, U.S. Patent No. 5481548 as applied to Claim 1, and further in view of Circo, U.S. Patent No. 4677614.

As per Claim 11:

As applied to Claim 1, Banks, Wei et al., and Wallace fail to specifically claim that, wherein diagnosing the SUT comprises: receiving information regarding data transfers with respect to the portions identified, the information being obtained via cyclic redundancy checking. But in an analogous art, Circo does teach this feature (see FIG.1 A25 SDLC, and column 10 lines 6-34). And column 1 lines 18-60 recite the advantage that the invention gives more reliable service by eliminating reliance on one master node. One with ordinary skill in the art at the time of the invention, motivated as suggested, would find it obvious to combine the characteristics, including CRC checking, to the device and method of Banks, Wei et al., and Wallace.

As per Claim 18:

As applied to Claim 17, Banks, Wei et al., and Wallace fail to further teach the method using CRC. But Circo does teach this, wherein the flow of data is a flow of data packets (column 12 lines 16-40); and wherein diagnosing the SUT further comprises: analyzing information acquired via cyclic redundancy checks performed at various locations associated with the flow of data (column 12 lines 47-59). And in view of the motivation previously stated, the claim is rejected.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P Trimmings whose telephone number is (571) 272-3830. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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